

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in this application.

Claims:

1. (original) A method of controlling the production of particulates in a subterranean wellbore comprising the steps of:

preparing a permeable cement composition comprising a hydraulic cement, water, and a degradable material capable of undergoing an irreversible degradation downhole;

placing the permeable cement composition in an annulus between a screen and the walls of the well bore adjacent to a fluid producing zone; and

allowing the permeable cement composition to form a permeable cement mass in the annulus.

2. (original) The method of claim 1 wherein the permeable cement composition further comprises a dispersant present in an amount sufficient to disperse the hydraulic cement and the degradable material within the permeable cement composition.

3. (original) The method of claim 2 wherein the dispersant is present in the permeable cement composition in an amount ranging from about 0.1% to about 5% by weight of the permeable cement composition.

4. (original) The method of claim 1 wherein the hydraulic cement comprises calcium, aluminum, silicon, oxygen, or sulfur.

5. (original) The method of claim 1 wherein the hydraulic cement comprises a Portland cement, pozzolana cement, gypsum cement, high alumina content cement, silica cement, high alkalinity cement, or low-density cement.

6. (original) The method of claim 1 wherein the hydraulic cement is present in the permeable cement composition in amount ranging from about 30% to about 70% by weight of the permeable cement composition.

7. (original) The method of claim 1 wherein the hydraulic cement is present in the permeable cement composition in an amount ranging from about 50% to about 60% by weight of the permeable cement composition.

8. (original) The method of claim 1 wherein the water is present in an amount sufficient to make the permeable cement composition a pumpable slurry.

9. (original) The method of claim 1 wherein the water comprises fresh water, salt water, or brine.

10. (original) The method of claim 1 wherein the water is present in an amount ranging from about 15% to about 40% by weight of the permeable cement composition.

11. (original) The method of claim 1 wherein the permeable cement composition further comprises a fluid loss additive.
12. (original) The method of claim 11 wherein the fluid loss additive is present in the present in the permeable cement composition in an amount ranging from about 0.1% to about 25% by weight of the permeable cement composition.
13. (original) The method of claim 1 wherein the permeable cement composition is mixed on-the-fly.
14. (original) The method of claim 1 further comprising before step (a) blending the permeable cement composition and transporting the permeable cement composition to the wellsite.
15. (original) The method of claim 1 wherein the degradable material comprises a degradable polymer or a dehydrated salt.
16. (original) The method of claim 15 wherein the degradable polymer comprises polysaccharides, chitins, chitosans, proteins, aliphatic polyesters, poly(lactides), poly(glycolides), poly(ϵ -caprolactones), poly(hydroxybutyrate), polyanhydrides, aliphatic polycarbonates, poly(orthoesters), poly(amino acids); poly(ethylene oxides), or polyphosphazenes.
17. (original) The method of claim 14 wherein the degradable polymer further comprises a plasticizer.
18. (original) The method of claim 1 wherein the degradable material comprises a stereoisomer of a poly(lactide).
19. (original) The method of claim 14 wherein the dehydrated salt comprises anhydrous sodium tetraborate or anhydrous boric acid.
20. (original) The method of claim 1 wherein the degradable material is present in an amount ranging from about 5% to about 70% by weight of the composition.
21. (original) The method of claim 1 wherein the degradable material comprises particles having a rod-like shape.
22. (original) The method of claim 1 wherein the permeable cement mass comprises channel-like voids.
23. (original) The method of claim 1 wherein the cement is a Portland cement and present in an amount of from about 30% to about 70% by weight of the permeable cement composition; the water is fresh water and is present in an amount of from about 15% to about 40% by weight of the cement composition; and the degradable material is a poly(lactic acid) particulate present in an amount of from about 5% to about 70% by weight of the permeable cement composition.

24. (original) A method of providing sand control in a subterranean formation penetrated by a well bore comprising the steps of:

providing a permeable cement composition comprising a hydraulic cement, water, and a degradable material capable of undergoing an irreversible degradation downhole;

placing the permeable cement composition into the subterranean formation by way of a well bore penetrating the formation; and

allowing the permeable cement composition to set therein to form a consolidated permeable cement mass to provide sand control.

25. (original) The method of claim 24 wherein the permeable cement composition further comprises a dispersant present in an amount sufficient to disperse the hydraulic cement and the degradable material within the permeable cement composition.

26. (original) The method of claim 25 wherein the dispersant is present in the permeable cement composition in an amount ranging from about 0.1% to about 5% by weight of the permeable cement composition.

27. (original) The method of claim 24 wherein the hydraulic cement comprises calcium, aluminum, silicon, oxygen, or sulfur.

28. (original) The method of claim 24 wherein the hydraulic cement comprises a Portland cement, pozzolana cement, gypsum cement, high alumina content cement, silica cement, high alkalinity cement, or low-density cement.

29. (original) The method of claim 24 wherein the hydraulic cement is present in the permeable cement composition in amount ranging from about 30% to about 70% by weight of the permeable cement composition.

30. (original) The method of claim 24 wherein the hydraulic cement is present in the permeable cement composition in an amount ranging from about 50% to about 60% by weight of the permeable cement composition.

31. (original) The method of claim 24 wherein the water is present in an amount sufficient to make the permeable cement composition a pumpable slurry.

32. (original) The method of claim 24 wherein the water comprises fresh water, salt water, or brine.

33. (original) The method of claim 24 wherein the water is present in an amount ranging from about 15% to about 40% by weight of the permeable cement composition.

34. (original) The method of claim 24 wherein the permeable cement composition further comprises a fluid loss additive.

35. (original) The method of claim 34 wherein the fluid loss additive is present in the present in the permeable cement composition in an amount ranging from about 0.1% to about 25% by weight of the permeable cement composition.

36. (original) The method of claim 24 wherein the permeable cement composition is mixed on-the-fly.

37. (original) The method of claim 24 further comprising before step (a) blending the permeable cement composition and transporting the permeable cement composition to the wellsite.

38. (original) The method of claim 24 wherein the degradable material comprises a degradable polymer or a dehydrated salt.

39. (original) The method of claim 38 wherein the degradable polymer comprises polysaccharides, chitins, chitosans, proteins, aliphatic polyesters, poly(lactides), poly(glycolides), poly(ϵ -caprolactones), poly(hydroxybutyrate), polyanhydrides, aliphatic polycarbonates, poly(orthoesters), poly(amino acids); poly(ethylene oxides), or polyphosphazenes.

40. (original) The method of claim 38 wherein the degradable polymer further comprises a plasticizer.

41. (original) The method of claim 24 wherein the degradable material comprises a stereoisomer of a poly(lactide).

42. (original) The method of claim 38 wherein the dehydrated salt comprises anhydrous sodium tetraborate or anhydrous boric acid.

43. (original) The method of claim 24 wherein the degradable material is present in an amount ranging from about 5% to about 70% by weight of the composition.

44. (original) The method of claim 24 wherein the degradable material comprises particles having a rod-like shape.

45. (original) The method of claim 24 wherein the permeable cement mass comprises channel-like voids.

46. (original) The method of claim 24 wherein the cement is a Portland cement and present in an amount of from about 30% to about 70% by weight of the permeable cement composition; the water is fresh water and is present in an amount of from about 15% to about 40% by weight of the cement composition; and the degradable material is a poly(lactic acid) particulate present in an amount of from about 5% to about 70% by weight of the permeable cement composition.

47. (currently amended) The method of claim 24 wherein the wellbore ~~comprises~~ includes a sand screen or a perforated shroud.

48. (original) A method of providing sand control in a wellbore penetrating a subterranean formation comprising the steps of:

placing a perforated shroud having perforations, the perforations being sealed by a temporary sealant, in the wellbore adjacent to a chosen subterranean interval;

providing a permeable cement composition, the permeable cement composition comprising a hydraulic cement, water, and a degradable material capable of undergoing an irreversible degradation downhole;

placing the permeable cement composition in an annulus between the perforated shroud and the chosen subterranean interval;

allowing the permeable cement composition to set to form a permeable cement mass in the annulus; and

removing the temporary sealant sealing the perforations of the perforated shroud to restore fluid communication between the well bore and the subterranean formation.

49. (original) The method of claim 48 wherein the degradable material comprises a degradable polymer or a dehydrated salt.

50. (original) The method of claim 49 wherein the degradable polymer comprises polysaccharides, chitins, chitosans, proteins, aliphatic polyesters, poly(lactides), poly(glycolides), poly(ϵ -caprolactones), poly(hydroxybutyrates), polyanhydrides, aliphatic polycarbonates, poly(orthoesters), poly(amino acids); poly(ethylene oxides), or polyphosphazenes.

51. (original) The method of claim 49 wherein the degradable polymer further comprises a plasticizer.

52. (original) The method of claim 48 wherein the degradable material comprises a stereoisomer of a poly(lactide).

53. (original) The method of claim 49 wherein the dehydrated salt comprises anhydrous sodium tetraborate or anhydrous boric acid.

54. (original) The method of claim 48 wherein the degradable material is present in an amount ranging from about 5% to about 70% by weight of the composition.

55. (original) The method of claim 48 wherein the degradable material comprises particles having a rod-like shape.

56. (original) The method of claim 48 wherein the permeable cement mass comprises channel-like voids.

57. - 85. (Cancelled)